

## ABSTRACT

### DETERMINATION OF MORPHOLOGICAL, PHENOLOGICAL AND POMOLOGICAL CHARACTERIZATION OF BLACK MULBERRY (*Morus nigra* L.) GROWN IN ULUBEY VICINITY, USAK PROVINCE

Zehra ÖZKAYA ERKALELİ

M.Sc. Thesis, Department of Horticulture

Supervisor: Assoc. Prof. Dr. Zeynel DALKILIÇ

2015, 53 pages

This study was conducted on 15 different black mulberry (*Morus nigra* L.) genotypes in Ulubey vicinity in Uşak province in 2013 and 2014. Morphological characteristics were in range as plant age 4-91 years, trunk circumference 61-187 cm; one-year-old branch diameter 0.30-0.95 mm, length 5.60-9.73 mm, node number 2.5-5.0, internode length 1.43-2.40 mm; two-year-old branch diameter 0.60-1.08 mm, length 16.83-18.50 mm, node number 4.5-6.0, internode length 3.03-4.98 mm; leaf width 8.1-11.9 mm, length 8.7-12.1 mm, leaf blade length 1.8-2.8 mm; leaf fresh weight 2.93-1.25 g, leaf dry weight 0.37-0.77 g, moisture ratio 69.3-78.4%. While in color measurement, L value 41.14-43.42, a value 8.20-10.70, b value 7.01-9.04, chroma 10.76-14.01, hue -0.81- -1.00 were observed in leaf lower side, L değeri 32.44-35.11, a değeri 7.60-9.62, b değeri 4.23-7.55, chroma 7.96-15.62, hue -0.98- -1.39 were determined in leaf upper side. Chlorophyll content were 0.67-0.69 and 0.57-0.60 in leaf upper side and lower side, respectively. Physiological characteristics were in range as leaf bud swelling time 17-22 April, blooming time 5-9 May, and harvest beginning time 28 June-1 July. Pomological characteristics were determined as fruit width 13.03-16.56 mm, length 16.70-23.47 mm, fresh weight 2.87-4.30 g, dry weight 0.90-1.22 g, color L 15.21-21.45, a 6.13-21.69, b 2.86-9.44, chroma 6.76-23.67, hue 1.98-2.70, titratable acid (TA) 1.37-2.24 g/100ml in citric acid equivalent, water-soluble acid solids (TTS) 11.55-19.04°Brix, pH 3.63-4.18, vitamin C amount 15.37-16.70 mg/100ml, total phenolic substance 132.41-147.16 mgGAE/100g, antioxidant capacity 15.04-24.44 µM TE/g. According to weighted-rankit method for pomological data regarding fresh consumption, genotypes were received scores between 210 and 440. Genotype 4 had the highest score in this selection for recommendation to growers.

**Key words:** *Morus nigra*, branch, leaf, flower, fruit characteristics, selection